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EXAMINER

CHANKONG, DOHM

ART UNIT	PAPER NUMBER
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2152

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,584

Applicant(s)

GANTI ET AL.

Examiner

Dohm Chankong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

- 1> Applicant's amendment and remarks have been received. Claims 18 and 19 have been added.
- 2> Claims 9(a) and 9(b) have been added as well, however, this is improper format. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 9(a) and 9(b) have been renumbered 20 and 21 respectively.

- 3> Claims 1-21 are presented for examination.

Response to Arguments

- 4> Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendment.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5> Claims 1-7, 10, 11, and 14-17, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claims 1, 5, 8, 9, 16 and 17 lack proper antecedent basis: "the left over capacity".
- b. Claim 9 lacks proper antecedent basis: "the remaining traffic capacities".

Claim Rejections - 35 USC § 102

6> The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7> Claims 1, 5, 8, and 10-17 are rejected under 35 U.S.C § 102(b) as being anticipated by Aatresh, U.S Patent No. 6,067,301.

8> Aatresh was disclosed by Examiner in non-final Office Action, dated 10.18.2004.

9> As to claim 1, Aatresh discloses a method of cascaded policing packet traffic comprising the steps of:

policing a service at a service rate guarantee, the service having a first class traffic capacity having a first class rate guarantee and second class traffic capacity having a second class rate guarantee, which is lower than the first class rate guarantee, the service rate

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guarantee being equal to the sum of the first class rate guarantee and the second class rate guarantee [Figure 6 «example 1» where: for example, the “HI” represents the first class and “MED” represents the second class | column 7 «lines 42-59»];

policing the first class traffic capacity at the first class rate guarantee [column 7 «line 66» to column 8 «line 3»];

if not all of the first class traffic capacity is being used, transmitting a portion of the second class traffic capacity on the left over capacity of the first class, the portion being less or equal to the second class traffic capacity [Figure 7 | column 2 «lines 41-47» | column 8 «lines 3-18»]; and

policing the remaining portion of the second class traffic capacity, which is not being policed on the left over capacity of the first class, at an aggregate rate of the first class rate guarantee and the second class rate guarantee [column 8 «lines 26-43»].

10> As to claim 5, Aatresh discloses a method of cascaded policing packet traffic comprising the steps of:

policing a service at a service rate guarantee, the service having a plurality of class traffic capacities having a respective plurality of traffic class rate guarantees arranged in a descending order of priorities, the service rate guarantee being equal to the sum of plurality of traffic classes rate guarantees [Figure 6 | column 2 «lines 41-53» | column 7 «lines 42-59»];

policing at least one of the plurality of traffic capacities at its respective traffic class rate guarantee [Figure 7 | column 7 «line 66» to column 8 «line 3»];

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if not all of the at least one of the plurality of traffic capacities is being used, transmitting respective portions of the plurality of traffic capacities, which have lower traffic classes rate guarantees, on the left over capacity of said at least one of the plurality of traffic capacities, the portion being less or equal to the sum of plurality of traffic capacities [Figure 6 | Figure 7 | column 2 «lines 41-47» | column 8 «lines 3-18»]; and

policing each of the remaining portions of said plurality of traffic capacities, which have lower traffic classes rate guarantees and have not been policed on the left over capacity of the at least one of the plurality of traffic capacities, at an aggregate rate of the plurality of traffic classes rate guarantees [column 8 «lines 26-43»].

11> As to claim 8, as it does not teach or further define over the limitations of claim 5 [it merely formulates the limitations of claim 5 into equation format], it is similarly rejected for the same reasons as set forth for claim 5, *supra*.

12> As to claims 10, 11 and 12 as they are merely policers that perform the steps of the method of claims 1, 5 and 8 respectively, they do not teach or further define over the already claimed limitations. Therefore, claims 10, 11 and 12 are similarly rejected for the same reasons set forth for claims 1, 5, and 8 respectively.

13> As to claims 13, 14 and 15, as they are merely software versions of the policer of claims 12, 10 and 11 respectively, they do not teach or further define over the already claimed

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limitations. Therefore, claims 13, 14, and 15 are similarly rejected for the same reasons set forth for claims 12, 10 and 11 respectively.

14> As to claim 16, as it merely is a readable medium that stores the steps of the method of claim 1, it does not teach or further define over the claimed limitations. Therefore claim 16 is similarly rejected for the same reasons set forth claim 1, supra.

15> As to claim 17, as it is merely an apparatus that executes the steps of the method of claim 1, it does not teach or further define over the claimed limitations. Therefore claim 17 is similarly rejected for the same reasons set forth claim 1, supra.

16> The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17> Claims 1-8 and 10-21 are rejected under 35 U.S.C § 102(e) as being anticipated by Santiago et al, U.S Patent No. 2002|0186661 A1 ["Santiago"].

18> As to claim 1, Santiago discloses a method of cascaded policing packet traffic comprising the steps of:

policing a service at a service rate guarantee, the service having a first class traffic capacity having a first class rate guarantee and second class traffic capacity having a second class rate guarantee, which is lower than the first class rate guarantee, the service rate guarantee being equal to the sum of the first class rate guarantee and the second class rate guarantee [0078, 0082 where: Santiago's flow is analogous to a service and his subflows are analogous to first and second classes];

policing the first class traffic capacity at the first class rate guarantee [0082];

if not all of the first class traffic capacity is being used, transmitting a portion of the second class traffic capacity on the left over capacity of the first class, the portion being less or equal to the second class traffic capacity [0082]; and

policing the remaining portion of the second class traffic capacity, which is not being policed on the left over capacity of the first class, at an aggregate rate of the first class rate guarantee and the second class rate guarantee [0077, 0082].

19> As to claim 2, Santiago discloses a method wherein a first class traffic capacity being marked as conforming if allowed by the first class rate guarantee and non-conforming if found to exceed the first class rate guarantee [0009, 0013, 0016].

20> As to claim 3, Santiago discloses a method wherein the second class traffic capacity being marked as conforming, if allowed by the aggregate rate of the first class rate guarantee

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and the second class rate guarantee and non-conforming if found to exceed the aggregate rate of the first class rate guarantee and the second class rate guarantee [0013, 0077, 0078, 0082, 0083] where: for example, one flow is analogous to a service, and its subflows are analogous to a first and second traffic class. The flow and its subflows are bounded by bandwidth set forth by the contract or QoS].

21> As to claim 4, Santiago discloses a method wherein the steps (b) and (d) comprise policing at the traffic class rate guarantee and a traffic class burst tolerance guarantee [Table 1 | 0086, 0090, 0091, 0092].

22> As to claim 5, Santiago discloses a method of cascaded policing packet traffic comprising the steps of:

policing a service at a service rate guarantee, the service having a plurality of class traffic capacities having a respective plurality of traffic class rate guarantees arranged in a descending order of priorities, the service rate guarantee being equal to the sum of plurality of traffic classes rate guarantees [0067, 0077, 0079];

policing at least one of the plurality of traffic capacities at its respective traffic class rate guarantee [0082];

if not all of the at least one of the plurality of traffic capacities is being used, transmitting respective portions of the plurality of traffic capacities, which have lower traffic classes rate guarantees, on the left over capacity of said at least one of the plurality of traffic

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capacities, the portion being less or equal to the sum of plurality of traffic capacities [0078, 0082, 0083]; and

policing each of the remaining portions of said plurality of traffic capacities, which have lower traffic classes rate guarantees and have not been policed on the left over capacity of the at least one of the plurality of traffic capacities, at an aggregate rate of the plurality of traffic classes rate guarantees [0077, 0082, 0083].

23> As to claim 6, as it does not teach or further define over the limitations of claim 2, it is similarly rejected for the same reasons set forth for claim 2, *supra*.

24> As to claim 7, Santiago discloses a method wherein each of the remaining portions of the plurality of traffic capacities is marked as conforming if allowed by the aggregate rate of the plurality of traffic classes rate guarantees and non-conforming if found to exceed the aggregate rate of the plurality of traffic classes rate guarantees [0082, 0083 where : Santiago's subflows are analogous to traffic capacities].

25> As to claim 8, as it is does not teach or further define over the limitations of claim 5 [it merely formulates the limitations of claim 5 into equation format], it is similarly rejected for the same reasons as set forth for claim 5, *supra*.

26> As to claims 10, 11 and 12 as they are merely policers that perform the steps of the method of claims 1, 5 and 8 respectively, they do not teach or further define over the already

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claimed limitations. Therefore, claims 10, 11 and 12 are similarly rejected for the same reasons set forth for claims 1, 5, and 8 respectively.

27> As to claims 13, 14 and 15, as they are merely software versions of the policer of claims 12, 10 and 11 respectively, they do not teach or further define over the already claimed limitations. Therefore, claims 13, 14, and 15 are similarly rejected for the same reasons set forth for claims 12, 10 and 11 respectively.

28> As to claim 16, as it merely is a readable medium that stores the steps of the method of claim 1, it does not teach or further define over the claimed limitations. Therefore claim 16 is similarly rejected for the same reasons set forth claim 1, supra.

29> As to claims 17-19, as they are merely claims to apparatuses that execute the steps of the method of claims 1-3 respectively, they do not teach or further define over the claimed limitations. Therefore claims 17-19 are similarly rejected for the same reasons set forth claims 1-3, supra.

30> As to claims 20 and 21, as they do not teach or further define over the limitations of the methods of claims 6 and 7, respectively [they merely formulate the stated limitations into an equation format], claims 20 and 21 are similarly rejected for the same reasons set forth for claims 6 and 7, respectively.

Claim Rejections - 35 USC § 103

31> The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32> Claims 2-4, 6, 7 and 18-21 are rejected under 35 U.S.C § 103(a) as being unpatentable over Aatresh, in further view of Santiago.

33> As to claim 2, Aatresh does not explicitly disclose a method wherein a first class traffic capacity being marked as conforming if allowed by the first class rate guarantee and non-conforming if found to exceed the first class rate guarantee.

34> In the same field of invention, Santiago discloses a method wherein a first class traffic capacity being marked as conforming if allowed by the first class rate guarantee and non-conforming if found to exceed the first class rate guarantee [0009, 0013, 0016]. It would have been obvious to one of ordinary skill in the art to have incorporated Santiago's conformance testing functionality into Aatresh's cascaded traffic policing method to insure that his various traffic queues to do not exceed their allotted bandwidth. Such an implementation helps the quality of service by enforcing bandwidth contracts for the queues.

35> As to claim 3, Aatresh does not explicitly disclose a method wherein the second class traffic capacity being marked as conforming, if allowed by the aggregate rate of the first class rate guarantee and the second class rate guarantee and non-conforming if found to exceed the aggregate rate of the first class rate guarantee and the second class rate guarantee.

36> Santiago discloses a method wherein the second class traffic capacity being marked as conforming, if allowed by the aggregate rate of the first class rate guarantee and the second class rate guarantee and non-conforming if found to exceed the aggregate rate of the first class rate guarantee and the second class rate guarantee [0013, 0077, 0078, 0082, 0083] where: for example, one flow is analogous to a service, and its subflows are analogous to a first and second traffic class. The flow and its subflows are bounded by bandwidth set forth by the contract or QoS]. It would have been obvious to one of ordinary skill in the art to incorporate Santiago's method of policing multiple traffic classes into Aatresh's cascading method to enable a finer level of control over the policing of the packets. Such an implementation would enable more control over the traffic classes and allow more efficient policing of the bandwidth or QoS contract.

37> As to claim 4, Aatresh does not explicitly disclose a method wherein the steps (b) and (d) comprise policing at the traffic class rate guarantee and a traffic class burst tolerance guarantee.

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38> Santiago discloses a method wherein the steps (b) and (d) comprise policing at the traffic class rate guarantee and a traffic class burst tolerance guarantee [Table 1 | 0086, 0090, 0091, 0092]. It would have been obvious to one of ordinary skill in the art to implement Santiago's policing with both the rate guarantee as well as a burst tolerance guarantee into Aatresh's cascading method to enable traffic classes to exceed their guarantees for a certain amount (burst). One would have been motivated to include Santiago's burst tolerance guarantee into Aatresh to allow for a finer level of control over the policing of the queues (flows).

39> As to claim 6, as it does not teach or further define over the limitations of claim 2, it is similarly rejected for the same reasons set forth for claim 2, *supra*.

40> As to claim 7, Aatresh does not disclose a method wherein each of the remaining portions of the plurality of traffic capacities is marked as conforming if allowed by the aggregate rate of the plurality of traffic classes rate guarantees and non-conforming if found to exceed the aggregate rate of the plurality of traffic classes rate guarantees.

41> Santiago discloses a method wherein each of the remaining portions of the plurality of traffic capacities is marked as conforming if allowed by the aggregate rate of the plurality of traffic classes rate guarantees and non-conforming if found to exceed the aggregate rate of the plurality of traffic classes rate guarantees [0082, 0083 where : Santiago's subflows are analogous to traffic capacities]. It would have been obvious to one of ordinary skill in the art

to incorporate Santiago's method of policing multiple traffic classes into Aatresh's cascading method to enable a finer level of control over the policing of the packets. Such an implementation would enable more control over the traffic classes and allow more efficient policing of the bandwidth or QoS contract.

42> As to claims 18 and 19, as they are merely claims to apparatuses that execute the steps of the method of claims 2 and 3 respectively, they do not teach or further define over the claimed limitations. Therefore claims 18 and 19 are similarly rejected for the same reasons set forth claims 2 and 3, supra.

43> As to claims 20 and 21, as they do not teach or further define over the limitations of the methods of claims 6 and 7, respectively [they merely formulate the stated limitations into an equation format], claims 20 and 21 are similarly rejected for the same reasons set forth for claims 6 and 7, respectively.

44> Claim 9 is rejected under 35 U.S.C § 103(a) as being unpatentable over Santiago, in view of Mohaban et al, U.S Patent No. 6,463,470 ["Mohaban"].

45> Santiago discloses a method of:
policing a service at a service burst tolerance guarantee, the service having a plurality

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of N traffic capacities, C_i , $i=1, 2, \dots, N$ and $N \geq 2$, having a plurality of burst tolerance guarantees, BT_i , $i=1, 2, \dots, N$ and $N \geq 2$ [Table 1 | 0085, 0086, 0087 where : each flow has associated variables including the committed burst size and peak burst size];

policing C_i traffic capacity at its respective burst tolerance guarantee BT_i [Figure 13 | 0086]; and

if not all of the C_i traffic capacity is being used, transmitting a portion of the C_1, C_2, \dots, C_{i-1} , traffic capacities on the left over capacity of the C_i traffic capacity, the portion being less or equal to $\sum_{i=1}^N C_i$ [0077, 0082, 0083 where : Santiago discloses that the subflows share any extra or available bandwidth, the bandwidth constrained by the service contract].

Santiago does disclose utilizing burst tolerance guarantees but does not explicitly disclose policing each of the remaining traffic capacities which is not in step (p), at an aggregate burst tolerance guarantee BA_i , which is $BA_i = \sum_{i=1}^N BT_i$.

46> Mohaban discloses policing traffic capacities at an aggregate burst tolerance which is the sum of the burst tolerances of the respective traffic capacities [column 22 «lines 52-64» where: Mohaban does not explicitly disclose the equation of claim 9. However his stated functionality of the shared policer represents the same functionality of the equation; that is, each of the rules (traffic capacities) are policed at an aggregate burst tolerance of 100 kbps]. It would have been obvious to one of ordinary skill in the art to incorporate Mohaban's aggregate burst tolerance into Santiago's cascading policing method to enable Santiago's method to take into account the burst tolerances of each of the subflows. Such an

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implementation would facilitate a more accurate enforcement of Santiago's shared bandwidth amongst the subflows.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Thomas - 2003|0086140 A1 : see [0019].

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is (571)272-3942.

The examiner can normally be reached on 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DC



Dung C. Dinh
Primary Examiner